

CLAIMS

What is claimed is:

1. A drilling or servicing fluid composition comprising:
an oleaginous liquid as the continuous phase;
5 one or more surfactants;
aphrons; and
one or more aphron stabilizers, wherein at least one of said aphron stabilizers produces an average aphron half-life of greater than or equal to about 5 hours.
2. The composition according to claim 1 wherein at least one of the aphron stabilizers is
10 selected from the group consisting of emulsifiers, detergents, lime, polymers, surfactants and mixtures thereof.
3. The composition according to claim 1 wherein the composition comprises at least 0.01% by weight aphron stabilizer.
4. The composition according to claim 1 wherein the composition comprises from about
15 0.01% to about 3% by weight aphron stabilizer.
5. The composition according to claim 1 wherein the composition comprises from about 0.03% to about 1% by weight aphron stabilizer.
6. The composition according to claim 1 wherein said oleaginous liquid comprises an organic, water-insoluble liquid.
- 20 7. The composition according to claim 6 wherein said oleaginous liquid is selected from the group consisting of petroleum oils and fractions thereof, vegetable oils, and synthetic organic liquids.
8. The composition according to claim 1 wherein at least one of the surfactants is selected from the group consisting of anionic, non-ionic and cationic surfactants.
- 25 9. The composition according to claim 1 further comprising one or more viscosifiers.
10. The composition according to claim 9 wherein said one or more viscosifiers is selected from the group consisting of oil-soluble and oil-dispersible viscosifiers.

11. The composition according to claim 9 wherein said one or more viscosifiers is selected from the group consisting of organophilic clays, viscoelastic surfactants, polymers and mixtures thereof.
12. The composition according to claim 11 wherein said one or more viscosifiers comprises
5 an organophilic clay selected from the group comprising attapulgites, bentonites, and mixtures thereof.
13. The composition according to claim 9 further comprising aqueous fluid in excess of an amount sufficient to hydrate said one or more viscosifiers.
14. The composition according to claim 13 wherein there is a synergistic effect between said
10 excess aqueous fluid and aphron stabilizer.
15. The composition according to claim 1 further comprising one or more additives selected from the group consisting of weighting agents, corrosion inhibitors, water-soluble salts, biocide, fungicides, seepage loss control additives, bridging agents, deflocculants, lubricity additives, shale control inhibitors, foam suppressors, emulsifying agents, wetting agents, filtration control agents,
15 and mixtures thereof.
16. The composition according to claim 1 wherein the composition has a low shear rate viscosity as measured by a Brookfield Viscometer at 0.06 sec^{-1} of at least 10,000 centipoise.
17. The composition according to claim 1 wherein the composition has a low shear rate viscosity as measured by a Brookfield Viscometer at 0.06 sec^{-1} of at least 20,000 centipoise.
- 20 18. The composition according to claim 1 wherein the composition has a low shear rate viscosity as measured by a Brookfield Viscometer at 0.06 sec^{-1} of at least 50,000 centipoise.
19. The composition according to claim 1 wherein the composition has a low shear rate viscosity as measured by a Brookfield Viscometer at 0.06 sec^{-1} of at least 100,000 centipoise.
20. The composition according to claim 1 wherein the aphrons comprise from about 5% by
25 volume to about 25% by volume of the composition.
21. The composition according to claim wherein the aphrons comprise from about 10% by volume to about 20% by volume of the composition.
22. The composition according to claim 1 wherein the aphrons have an average half-life of greater than or equal to about 10 hours.

23. The composition according to claim 1 wherein the aphrons have an average half-life of greater than or equal to about 15 hours.
24. The composition according to claim 1 wherein the aphrons are stable at pressures of greater than or equal to about 2,000 psi.
- 5 25. The composition according to claim 1 wherein the aphrons are stable at pressures of greater than or equal to about 5,000 psi.
26. The composition according to claim 1 wherein the aphrons are stable at pressures of greater than or equal to about 8,000 psi.
27. The composition according to claim 1 wherein the composition can be continuously
10 recirculated.
28. The composition according to claim 1 wherein the aphrons prevent loss of excess drilling or servicing fluid into a formation.
29. The composition according to claim 1 wherein the aphrons effectively seal a formation.
30. A process for drilling or servicing a wellbore in a subterranean formation wherein a
15 drilling or servicing fluid is circulated in the wellbore, comprising:
- utilizing as the drilling or servicing fluid an oleaginous liquid as the continuous phase, one or more surfactants, aphrons, and one or more aphron stabilizers, wherein at least one of said aphron stabilizers produces an average aphron half-life of greater than or equal to about 5 hours.
31. The process according to claim 30 wherein the aphrons have an average half-life of greater
20 than or equal to about 10 hours.
32. The process according to claim 30 wherein the aphrons have an average half-life of greater than or equal to about 15 hours.
33. The process according to claim 30 wherein the composition can be continuously recirculated.
- 25 34. The process according to claim 30 wherein the aphrons prevent loss of excess drilling or servicing fluid into the formation.
35. A drilling or servicing fluid composition comprising:
- an oleaginous liquid as the continuous phase;

one or more surfactants;

aphrons;

one or more aphron stabilizers

one or more viscosifiers; and

5 aqueous fluid in excess of an amount sufficient to hydrate said one or more viscosifiers.

36. The composition according to claim 35 wherein there is a synergistic effect between said excess aqueous fluid and aphron stabilizer.

37. The composition according to claim 36 wherein said one or more viscosifiers comprises an organophilic clay selected from the group comprising attapulgites, bentonites, and mixtures
10 thereof.

38. The composition according to claim 37 wherein the composition comprises at least 0.01% by weight aphron stabilizer.

39. The composition according to claim 38 wherein the aphrons have an average half-life of greater than or equal to about 10 hours.

15 40. The composition according to claim 38 wherein the aphrons have an average half-life of greater than or equal to about 15 hours.